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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,968	09/23/2003	Iosif R. Korsunsky		4867

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WEI TE CHUNG
FOXCONN INTERNATIONAL, INC.
1650 MEMOREX DRIVE
SANTA CLARA, CA 95050

EXAMINER

GILMAN, ALEXANDER

ART UNIT PAPER NUMBER

2833

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/669,968	Applicant(s) KORSUNSKY ET AL.	
	Examiner Alexander D Gilman	Art Unit 2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-13 and 20-27 is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 3-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/23/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Woychik et al.

With regard to claim 1, 2, Woychik et al (US 5,754,411) disclose (Fig. 8-11) an electrical interconnection system, composing:

a first printed circuit board (175) defining a receiving slot (178);

a second printed circuit board (150) having an edge received in the receiving slot of the first printed circuit board; and

an electrical connector comprising contacts (col. 7, lines 60-67 –col. 8, lines 1-5 or 24, 34) electrically connecting with the first and the second printed circuit boards.

With regard to claim 2, Woychik et al disclose the first printed circuit board has first conductive pads (24) arranged along the receiving slot, and wherein the second printed circuit board has second conductive pads (34) arranged parallel to the edge of the second printed circuit board.

2. Claims 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Cabourne.

With regard to claim 14, Cabourne (US 4,904,197) discloses (Fig. 2 and 11) an electrical interconnection system, comprising:

a printed circuit board (14) having a first surface;

a first group of conductive pads (78, Fig. 11) arranged on the first surface;

a second group (78) of conductive pads arranged on the first surface and spaced from the first conductive pads;

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a first electrical connector(22) mounted on the printed circuit board over the first group of conductive pads and defining a first mating face; and

a second electrical connector (24) mounted on the printed circuit board over the second group of conductive pads and defining a second mating face facing the first mating face.

With regard to claim 15, Cabourne discloses the mating faces define a first channel therebetween adapted for electrically receiving another printed circuit board (18) therein.

With regard to claim 16, Cabourne discloses (Fig .6-10) the first and the second electrical connectors each comprise contacts and an actuator (46) adapted for actuating the contacts to electrically contact with the another printed circuit board.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabourne.

Cabourne discloses all of the limitations except for a third and a fourth connectors mounted on a second surface of the printed circuit board.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a third and a fourth connectors mounted on a second surface of the printed circuit board, , since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Allowable Subject Matter

Claims 10-13 and 20-27 are allowed.

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Claims 3-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

No prior art has been found to anticipate or render obvious the presently claimed subject matter.

Specifically, none of the prior art of record discloses the combination of the limitations presented including the contacts moveably contact with the first and the second conductive pads of the first and the second printed circuit boards (claim 3)

the connector defining a plurality of passageways between the mating face and the mounting face and in which the contacts are moveably received (claim 4).

the actuator for applying a driving force to the contact to move a first end of the contact along the first printed circuit board and to move a second end of the contact along the second printed circuit board (claim 5).

the contacts defining a third plane serving as a hypotenuse of a triangle defined by the first, the second and the third planes (claim 9) .

the plurality of first printed circuit boards and the plurality of second printed circuit boards connected through the plurality of receiving slots defined in each first printed circuit board, the first and the second printed circuit boards intersecting with each other through the slots to define a plurality of nodes each configured by first, second, third and fourth quadrants; and at least one electrical connector arranged in at least one of the four quadrants of each node to electrically interconnect the first and the second printed circuit boards (claim 10);.

the first set of printed circuit boards and said second set of printed circuit boards being interwoven with each other around said first front edge sections and said second front edge sections (claim 20);

the intersection line of said first front edge section and said second front edge section being perpendicular to both the first front edge of said first front edge section and the second front edge of said second front edge section (claim 23).

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fitzgerald et al (US 6,422,876), Brown et al (US 6,128,201), Hamilton (US 5,402,078), and Evans et al (US 4,838,798) are recited for the types of electrical connections of pluralities of non-parallel printed circuit boards.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander D Gilman whose telephone number is 571 272-2004. The examiner can normally be reached on Monday-Friday, 10:30 a.m. - 8:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on 571 272-2800 ext. 33. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

04/12/2004


ALEXANDER GILMAN
PRIMARY EXAMINER